

**EVALUATION PROPERTIES OF OIL EXTENDED
NATURAL RUBBER USING DUTREX -R OIL**

BY

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Abstract

A novel technique for the incorporation of oil emulsion into the latex was developed which was found to be very much less time consuming when compared with the traditional oil extension process. This technique has been used in this project in preparing a range of laboratory scale oil extended natural rubber samples.

Acetone extractions show that about 74 % of the oil could be easily incorporated into the latex, using this technique. Mooney Viscosity, Initial Plasticity of Dutrex - R oil extended natural rubber samples are found to decrease with increasing the level of oil extension. 15 % and 20 % Dutrex - R oil extended natural rubber samples came to be determined as the best percentages of oil incorporation.

Evaluation of processing properties of oil extended natural rubber was done in the Brabender Plasticorder. The energy required to masticate the rubber for particular time, of Dutrex - R oil extended natural rubber samples are found to decrease with increasing the level of oil extension

The tyre tread compounds were prepared by using the above mentioned two Dutrex R oil extended natural rubber samples and unextended control samples. Thereafter rheological properties were calculated. It was found that the Scorch time and 90 % cure time was found to increased with increasing the level of oil extension.

Evaluation of physical properties of the tyre tread compounds prepared by using Dutrex - R oil extended natural rubber showed changes in some physical properties such as tensile strength, modulus and compression set and hardness of vulcanisate decreased with increasing the oil extension. Also laboratory abrasion resistance of oil extended tread compounds was found to be good and tear strength is good in all levels.

Based on the results of acetone extraction values, 15% and 20 % of the oil extended rubber were selected as the best percentage and for the preparation of tyre tread compound with the assistance of the Associated Motor Ways Ltd.

Rheological properties of the factory scale tread compound with Dutrex - R oil extended natural rubber showed more poor reversion resistance than the control tread compound

Factory scale tread compound prepared with Dutrex - R oil extended natural rubber showed surprisingly good abrasion resistance.

Evaluation of service properties of these retreaded tyres on the roads is in progress.

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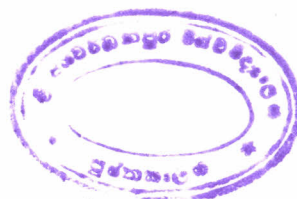
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